

Art Unit: 1652

CLMPTO 07/29/04 SLW

CLAIMS 1-37 (CANCELED)

-- 38. A purified carbonyl reductase having the following physicochemical properties:

reduces 4-haloacetoacetate ester to produce (S)-4-halo-3 hydroxybutyrate ester using reduced β -nicotinamide adenine dinucleotide as an electron donor;

has high reductase activity for 4-chloroacetoacetate ester but does not substantially dehydrogenate any optical isomers of 4-halo-3-hydroxybutyrate ester;

shows higher enzymatic activity when used with reduced β -nicotinamide adenine dinucleotide as an electron donor than when used with reduced β -nicotinamide adenine dinucleotide phosphate;

has an optimal pH of 5.0 to 6.0;

does not substantially dehydrogenate isopropanol and does not reduce acetoacetate; and

has a molecular weight of about 32,000 daltons when determined by sodium dodecylsulfate-polyacrylamide gel electrophoresis.--